



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Simmons Confirmation No.: 6779  
Appl No.: 10/090,035 Group Art Unit: 1638  
Filed: February 28, 2002 Examiner: Medina Ahmed Ibrahim  
For: NUCLEIC ACIDS ENCODING DEFENSE INDUCIBLE  
PROTEINS AND USES THEREOF

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**RESPONSE TO RESTRICTION REQUIREMENT**

This is in response to the Office Action dated April 22, 2002, in which the Examiner has required restriction between Group I, namely Claims 1-4; Group II, namely Claims 5-8 and 10-12; and Group III, namely Claim 9. Further, for Groups I and II, the Examiner has required restriction between the pairs of polynucleotide sequences set forth in Items A-K. For Group III, Applicant must elect one of the polypeptide sequences of the sequence listing. Applicant hereby provisionally elects with traverse to prosecute the claims of Group I (Claims 1-4) as drawn to Item A (SEQ ID NO:1 or a nucleotide sequence encoding SEQ ID NO: 2) and expressly reserves the right to file divisional applications or take such other appropriate measures deemed necessary to protect the inventions in the remaining claims.

**Reconsideration of the Requirement for Restriction is Kindly Requested**

Applicant requests reconsideration and modification of the Restriction Requirement because the subject matter should be treated under linking claims practice of 37 C.F.R. § 1.141 and MPEP 809.02. Specifically, Applicant requests that the Restriction Requirement be reconsidered and modified to the extent that the maize sequences of items A-E be considered under linking claim practice, as required by the relevant sections of the MPEP.

The relevant sections of the MPEP state that linking claims are drawn to, and inseparable from, two or more properly divisible inventions. MPEP § 809. The most common types of linking claims which, if allowed, act to prevent restriction between inventions that can otherwise be shown to be divisible, are:

- (A) genus claims linking species claims;
- (B) a claim to the necessary process of making a product linking proper process and product claims;
- (C) a claim to "means" for practicing a process linking proper apparatus and process claims; and
- (D) a claim to the product linking a process of making and a use (process of using).

MPEP § 809.03.

Under linking claim practice, claims linking distinct inventions must be examined with the invention elected, and should any linking claim be allowed, the restriction requirement must be withdrawn. MPEP § 809. Any claim(s) directed to the nonelected invention(s), previously withdrawn from consideration, which depends from or includes all the limitations of the allowable linking claim must be rejoined and will be fully examined for patentability. *Id.*

Applicant's claims qualify for linking claim practice because claim 1 is generic. It contains generic clauses that encompass each of the individual sequences. Thus, although the sequences *are* distinct, they are all linked by claim 1. The Restriction Requirement does not make note of this relationship.

In the present case, the generic claim is supported by a structural and functional relationship between the sequences that is described as follows in Applicant's disclosure:

A maize disease or stress induced polynucleotide was observed to be highly represented among EST (expressed sequence tags) cDNAs derived from leaf tissue that was either resistant to fungal inoculation or treated with jasmonic acid, a chemical elicitor of plant defense responses. *The maize gene is represented by at least five closely related full-length cDNAs contigs (here termed "alleles") that encode either identical or nearly identical peptides.* A cDNA for one of these "alleles", named ZmAFP1-1 was sequenced. The other four alleles in maize were sequenced in their coding regions. The ORF for the gene predicts a small 10 kDa protein rich in histidine, glycine, and aspartic acid, but with a net neutral pI. Protein domain searching revealed homology to a fly (*Sarcophaga*

*peregrina*) antifungal protein of similar molecular weight (Iijima, R. *et al.*, (1993) *J. Biol. Chem.* 268:12055-12061).

See the specification, paragraph spanning pages 69-70 (emphasis added). These five maize nucleic acid sequences are set forth in SEQ ID NOS:1, 3, 5, 7 and 9 (items A-E of the Restriction Requirement). Further, cDNAs for rice and wheat genes closely homologous to the maize genes were also identified. The rice sequences are set forth in SEQ ID NOS:13 and 15 (items F and G), while the wheat sequences are set forth in SEQ ID NOS:17, 19, 21 and 23 (items H, I, J and K). Based upon this teaching, there is clearly a structural-functional relationship among all of the sequences disclosed in the present application.

Not unexpectedly, the structural relationship is particularly strong between the maize sequences. In support of this, Applicant submits herewith an alignment between the maize sequences (Exhibit A) which shows, for example, that SEQ ID NOS:1 and 3 are over 82% identical, SEQ ID NOS:3 and 5 are over 99% identical, etc.

To clarify the relationship between the sequences, Applicant has amended the claims. In particular, Applicant has amended claim 1 by removing clauses a, b, c, f, and g. As amended, claim 1 now recites "[a]n isolated nucleic acid comprising a polynucleotide having at least 80% sequence identity to SEQ ID NO: 3, wherein said polynucleotide encodes a maize AFP1 protein, or a complement of said polynucleotide." Further, Applicant has added new claims 13-17 drawn to the nucleotide sequences of SEQ ID NOS:1, 3, 5, 7 and 9, respectively (see the Preliminary Amendment, filed concurrently herewith). The new claims are all within Group I and are drawn to the sequences of Items A-E. Support for the new claims and the amendments lies in the original claims and specification (see the Preliminary Amendment). Applicant emphasizes that the new and amended claims meet the requirements of MPEP § 809 because claim 1 is generic to each of new claims 13-17 and the new claims depend from generic claim 1. Further, claim 1 reads on each of claims 13-17.

For these reasons, the Restriction Requirement should be reconsidered and modified as follows. First, claims 1-4 and 13-17 as directed to items A-E should be recognized as linked. Under linking claims practice, the generic claim and a first species claim are examined along with the other claims of the group. Accordingly, Applicant requests that claims 1-4 and 13 be

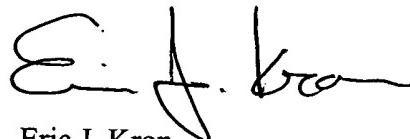
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examined first. Subsequently, claims 14-17 should be examined as set forth in MPEP § 809, particularly § 809.02.

If the Examiner has further questions or comments with respect to examination of this case, it is respectfully requested that the Examiner telephone the undersigned so that further examination of this application can be expedited.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those, which may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

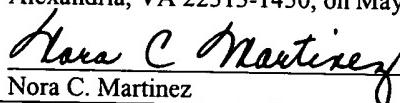
Respectfully submitted,



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I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on May 22, 2003.

  
Nora C. Martinez